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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/755,288	01/08/2004	John Christian Sorensen	10541-1783	1333

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EXAMINER	
TRIEU, THAI BA	
ART UNIT	**PAPER NUMBER**
3748	

DATE MAILED: 07/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/755,288	SORENSEN ET AL.	
	Examiner	Art Unit	
	Thai-Ba Trieu	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the Amendment filed on May 12, 2005. Applicant's cooperation in correcting the informalities in the Abstract is appreciated. Claims 1-2, 5, 8, 13-16, 19-, 22, 25-26, 28-36 are amended.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 5, 14-15, 19, 25-26, 27-32, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negri et al. (Patent Number 4,142,494), in view Gobert (Patent number 5,615,554).

Negri discloses an air induction system for inducing airflow into the intake of an internal combustion engine (10) having a turbocharger (20, 34), said system comprising:

a clean air channel (an interior portion of an air cleaner 14 and a portion of 18 connecting to an air cleaner 14) containing primarily clean air directing airflow to an inlet of said turbocharger (20, 34) (See Figure 1);

a plenum (a portion of 18 directly connecting to turbocharger) in fluid communication with said clean air channel, said plenum located within an area directly in front of said inlet of said turbocharger (See Figure 1); and

an air filter (air cleaner snorkel 13) in fluid communication with an inlet of said clean air channel (an interior portion of an air cleaner 14 and a portion of 18 connecting to an air cleaner 14) and located upstream of said plenum (a portion of 18 directly connecting to turbocharger) (See Figure 1);

wherein said clean air channel (an interior portion of an air cleaner 14 and a portion of 18 connecting to an air cleaner 14) redirects said airflow at least approximately 180 degrees from a direction of said airflow entering said air inlet of said turbocharger (See Figure 1); and

wherein said clean air channel comprises an angular diffuser (a portion of 18 connecting to an air cleaner 14) in fluid communication with said plenum (a portion of 18 directly connecting to turbocharger) at approximately a 90-degree angle (See Figure 1).

However, Negri fails to disclose said portion in fluid communication with said clean air channel being an expansion chamber having an increased cross sectional area relative to a cross sectional area of a portion of the air channel; wherein said diffuser (portion 31) in communication with said expansion chamber; and said air channel comprising a conical diffuser with a cone angle that establishes an expansion rate of a cross sectional area encompassed within diffuser (See Figure 2).

Gobert teach that it is conventional in the art of turbocharged internal combustion engine control system, to utilize said portion in fluid communication with said clean air channel being an expansion chamber (30) having an increased cross sectional area relative to a cross sectional area of a portion of the air channel (See Figure 2); wherein

said diffuser (portion 31) in communication with said expansion chamber (portion 30b); and said air channel comprising a conical diffuser with a cone angle that establishes an expansion rate of a cross sectional area encompassed within diffuser (See Figure 2).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized said plenum having an increased cross sectional area relative to a cross sectional area of a portion of the air channel, as taught by Gobert, to control the airflow in the intake manifold and improve the efficiency of the Negri device.

Note that as being discloses in Paragraph [0005] of the specification, "the plenum or the expansion chamber can be utilized to achieve similar results... overall head loss"; therefore the recitation of "restoring pressure head within ...turbocharger" is considered as the functional language for achieving a desired result. Therefore, the Negri plenum (18) is capable of performing the same desired functions as an expansion chamber the instant invention having been claimed in claim 1.

Claims 2, 8, 16, 22, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negri et al. (Patent Number 4,142,494), in view of Gobert (Patent Number 5,615,554), and further in view of Beckley et al. (6,158,082).

The modified Negri device discloses the invention as recited above; however, fails to disclose a location of a bell-mouth transition.

Beckley teaches that it is conventional in the blower tube noise reduction art, to utilize a bell-mouth transition (63) positioned between the outlet of said expansion chamber (62) and the inlet of the turbocharger (Read as a blower 30), for reducing the

velocity of the air flow within the clean air duct and the inlet of the turbocharger (See Figure 10-11 and 16-18).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a bell-mouth transition (63) positioned between the outlet of said plenum and the inlet of the turbocharger, as taught by Beckley, to reduce the turbulence and acoustic energy generated by the air flow through the plenum outlet, and also to improve the efficiency of the turbocharger by reducing the flow resistance in the air supply to the impeller/rotor of the compressor in the modified Negri device.

Claims 3-4, 9-10, 13, 17-18,and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negri et al. (Patent Number 4,142,494), in view of in view of Gobert (Patent Number 5,615,554) and Beckley et al. (Patent Number 6,158,082), and further in view of Design choice.

The modified Negri device discloses the invention as recited above; however, fails to disclose the radius of the bell-mouth transition being of approximately 20%, and from approximately 3 to approximately 30% of the effective diameter of the inlet of the turbocharger; and said plenum having a cross-sectional area lowering flow velocity through said plenum to less than 75 m/s.

One having an ordinary skill in the turbocharged internal combustion engine art, would have found the radius of the bell-mouth transition being of approximately 20%, and from approximately 3 to approximately 30% of the effective diameter of the inlet of the turbocharger; and said plenum has a cross-sectional area lowering flow velocity

through said plenum to less than 75 m/s, as a matter of design choice. Moreover, there is nothing in the record, which establishes that the claimed dimension and cross sectional area, presents a novel of unexpected result (See In re Kuhle, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Claims 6-7 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negri et al. (Patent Number 4,142,494), in view of Gobert (Patent Number 5,615,554), and further in view of Design choice.

The modified Negri device discloses the invention as recited above; however, fails to disclose the cone angle being approximately 12 degrees, and in the range of approximately 4 to approximately 16 degrees.

One having an ordinary skill in the turbocharged internal combustion engine art, would have found the cone angle being approximately 12 degrees, and in the range of approximately 4 to approximately 16 degrees, as a matter of design choice, depending on the engine requirements. Moreover, there is nothing in the record, which establishes that the claimed angle, presents a novel of unexpected result (See In re Kuhle, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negri et al. (Patent Number 4,142,494), in view of Gobert (Patent Number 5,615,554) and Beckley et al. (Patent Number 6,158,082), and further in view of Design choice.

The modified Negri discloses the invention as recited in the rejection of claim 8; however, fails to disclose the cone angle being approximately 12 degrees, and in the range of approximately 4 to approximately 16 degrees.

One having an ordinary skill in the turbocharged internal combustion engine art, would have found the cone angle being approximately 12 degrees, and in the range of approximately 4 to approximately 16 degrees, as a matter of design choice, depending on the engine requirements. Moreover, there is nothing in the record, which establishes that the claimed angle, presents a novel of unexpected result (See In re Kuhle, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Response to Arguments

Applicant's arguments with respect to claims 1-36 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Berger (US Patent Number 5,586,861) discloses an air flow measuring centrifugal fan having a filter (36) and a plenum (43) directly disposed within in an area in front of an inlet cone (26) of the bladed wheel (24) (See Figure 1).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB
July 06, 2005

Thai-Ba Trieu
Primary Examiner
Art Unit 3748